The time-course of ultra-rapid object and scene categorization

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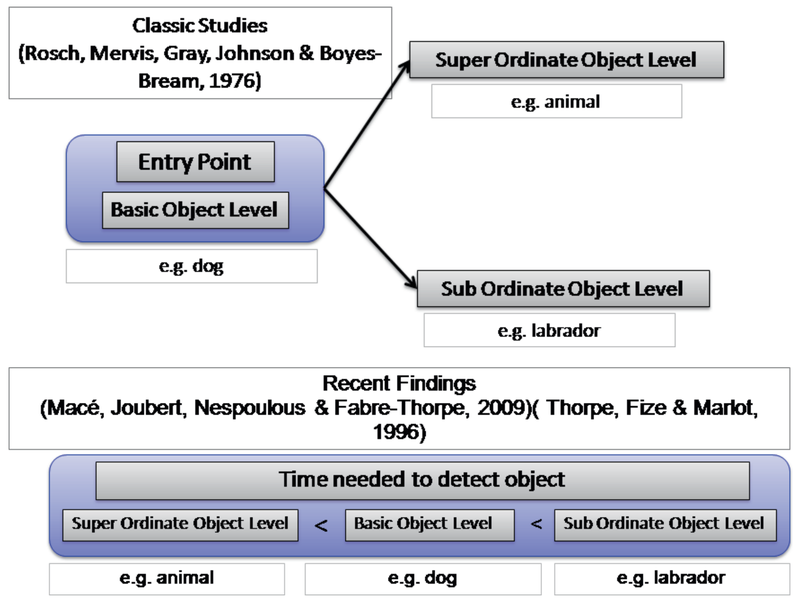
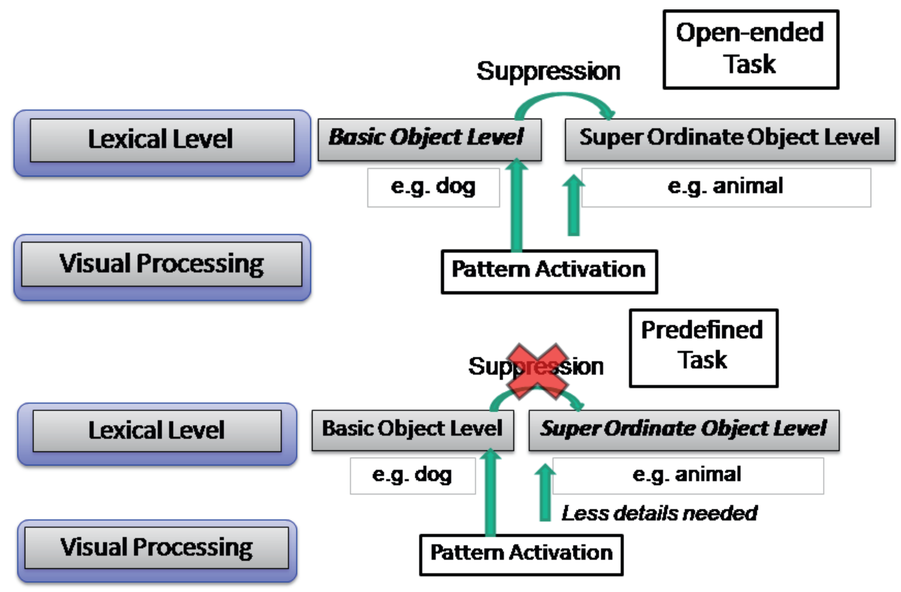
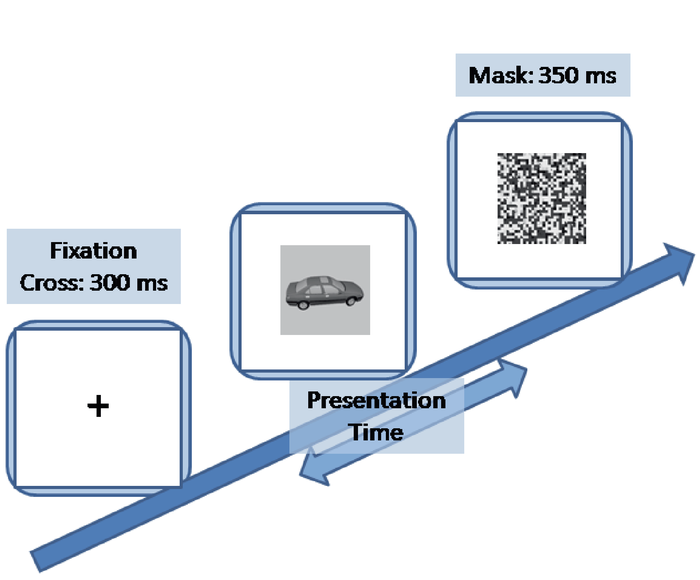
Introduction

"Rapid Categorization and Parallel Distributed Processing theory (PDP)" (Norman & O'Reilly, 2003)





Experimental Design



Presentation Time range [16ms, 80ms]

Presentation Time decreases (increases) if performance is above (below) 75%

Experiment

Overview: Questions (level)

Is there a piece of furniture in the photo press spacebar. (*Super Ordinate Level*)

Is there a vehicle in the photo press spacebar. (*Super Ordinate Level*)

Is there a bed in the photo press spacebar. (*Basic Level)*

Is there a chair in the photo press spacebar. (*Basic Level)*

Is there a plane in the photo press spacebar.(*Basic Level*)

Is there a car in the photo press spacebar. (*Basic level*)

Overview: Participants

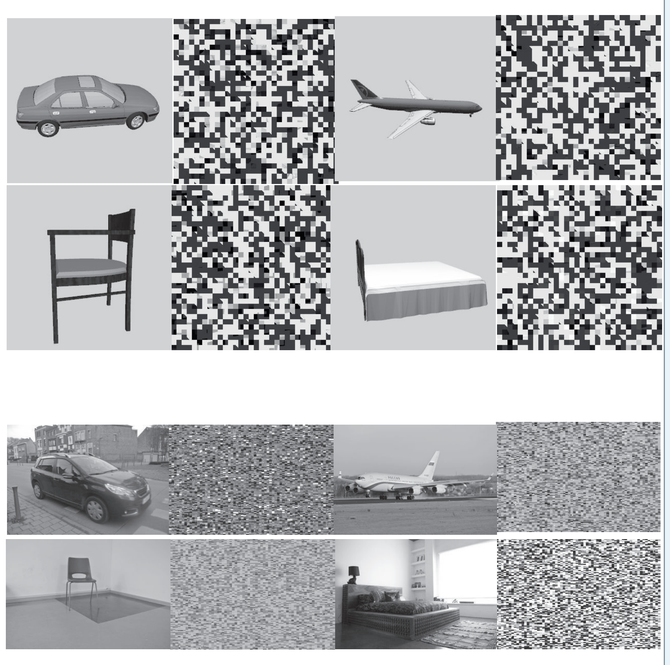
Total Subjects: 139

Payment: Course Credits

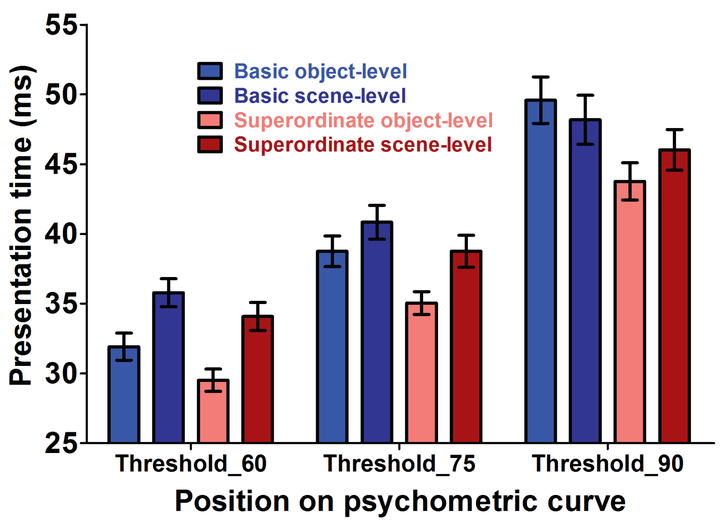
Group test: maximum group size 16 subjects

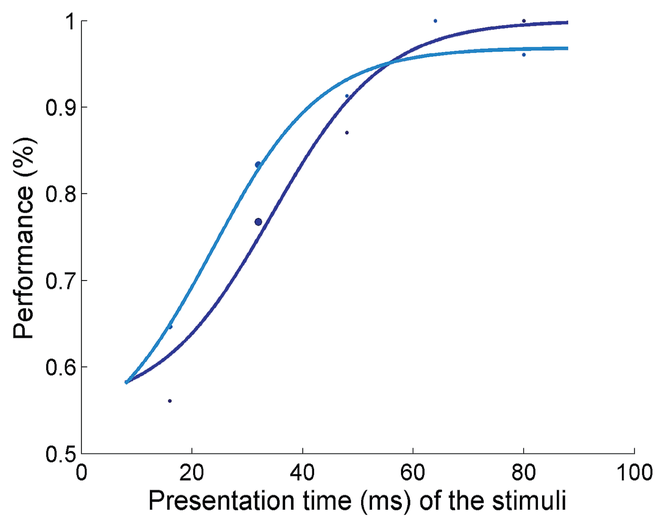
Range age [17,29]

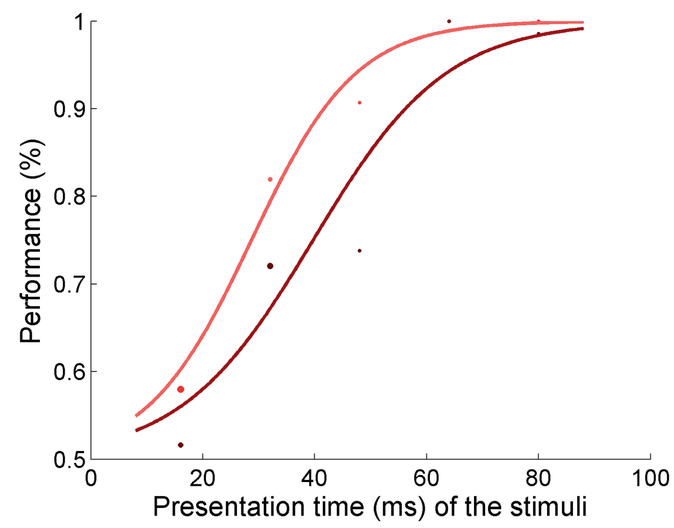
Mean age: 18,71, SD: 1,6565



Results







Conclusions

1. Clear improvement in performance over longer presentation time(PT).
2. Replication super ordinate advantage (e.g. Macé, Joubert, Nespoulous, & Fabre-Thorpe, 2009).
3. More accurate detection of objects in ultra short PT compared with scenes.
4. Accuracy differences between objects and scenes decrease when PT increases.

This indicates that time is needed to retrieve the object in the scene.

Work In Progress

Experimental findings will be simulated using Leabra Vision (LVis)

model from O'Reilly, Wyatte, Herd, Mingus, & Jilk (2013).

References

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